



Office/Ref. No.: CISCO-7703

Patent

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Hart et al.

Serial No.: 10/807,547

Filed: March 22, 2004

Title: CHANNEL TRACKING IN AN
OFDM WIRELESS RECEIVER

Group Art Unit: 2661

Examiner:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL: INFORMATION DISCLOSURE STATEMENT

Dear Commissioner:

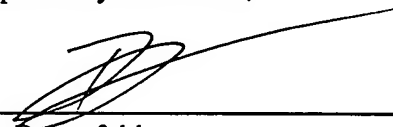
Transmitted herewith are:

- ☒ An Information Disclosure Statement for the above referenced patent application, together with PTO form 1449 and a copy of each reference cited in form 1449.
- ☐ A payment for petition fees.
- ☒ Return postcard.
- ☒ The commissioner is hereby authorized to charge payment of any missing fee associated with this communication or credit any overpayment to Deposit Account 50-0292.

A DUPLICATE OF THIS TRANSMITTAL IS ATTACHED

Date: June 14, 2004

Respectfully submitted,


Dov Rosenfeld
Attorney/Agent for Applicant(s)
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Certificate of Mailing under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: June 14, 2004

Signature: 

Amy Drury



Our Docket/Ref. No.: CISCO-7703

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Commissioner:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
 - ☐ Certification under 37 CFR 1.97(e), or
 - ☐ a \$180.00 fee under 37 CFR 1.17(p)
(After the CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with a:
 - ☐ Certification under 37 CFR 1.97(e), and
 - ☐ a petition under 37 CFR 1.97(d)(2)(ii), and
 - ☐ a \$130.00 petition fee set forth in 37 CFR 1.17(i)(1).
(Filed after final action or notice of allowance, whichever occurs first, but before payment of the issue fee)

☒ Applicant(s) submit herewith Form PTO 1449-Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

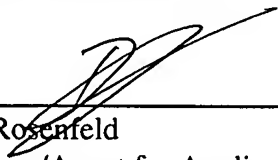
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Date of Deposit: <u>June 14, 2004</u>	Signature: <u>Amy Drury</u>

It is expressly requested that the cited information be made of record in the application and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Date: June 14, 2004

Respectfully submitted,



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Attorney/Agent for Applicant(s)
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INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)				ATTY. DOCKET NO. CISCO-7703		SERIAL NO. 10/807,547	
				APPLICANT Hart et al.			
				FILING DATE 22 Mar 2004		GROUP 2661	

O I P E
JUN 17 2004
PATENT & TRADEMARK OFFICE

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE	
AA	2002/0131516 A1	Sep. 19, 2002	El-Gamal et al.	375	285	Nov. 5, 2001	
AB	5,912,876	Jun. 15, 1999	H'mimy	370	210	Jan. 15, 1997	
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EXAMINER INITIAL	DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES NO	
AO							

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)							
EXAMINER INITIAL	AP	Ove Edfors, Magnus Sandell, Jan-Jaap van de Beek, Sarah Kate Wilson and Per Ola Borjesson. "Analysis of DFT-Based Channel Estimators for OFDM." <i>Wireless Personal Communications</i> , vol. 12, Issue 1, pp. 55-70, January 2000.					

EXAMINER	DATE CONSIDERED
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*EXAMINER: initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.

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	BA						
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	PUBLI-CATION DATE	COUNTRY	CLASS	SUB-CLASS	TRANS- LATION YES NO
	BB						
OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)							
	BC	Ye (Geoffrey) Li, Leonard J. Cimini, Jr., and Nelson R. Sollenberger. "Robust Channel Estimation for OFDM Systems with Rapid Dispersive Fading Channels." <i>IEEE Transactions on Communications</i> , vol. 46, no. 7, pp. 902-915, July 1998.					
	BD	Vittoria Mignone and Alberto Morello. "CD3-OFDM: A Novel Demodulation Scheme for Fixed and Mobile Receivers." <i>IEEE Transactions on Communications</i> , vol. 44, no. 9, pp. 1144-1151, Sept. 1996.					
	BE	Ye (Geoffrey) Li. "Simplified Channel Estimation for OFDM Systems with Multiple Transmit Antennas." <i>IEEE Transactions on Wireless Communications</i> , vol. 1, no. 1, pp. 67-75, Jan. 2002.					
	BF	Juha Heiskala and John Terry. <i>OFDM Wireless LANs: A Theoretical and Practical Guide</i> (ISBN: 0672321572) Publisher: Sams Publishing, 2002. Chapter 2, page 81: "Enhancing the Channel Estimate", and Chapter 2, page 84: bibliography for Chapter 2.					
	BG	Alexandre Ribeiro Dias, Stephanie Roquette and Karine Gosse. "MTMR Channel Estimation and Pilot Design in the Context of Space-Time Block Coded OFDM-Based WLANs." Centre de Recherche de Motorola, Paris. Available online at http://www.telecom.ntua.gr/fitness/dissemination/MOT-mtmtmr_channel_estimation_wlan.pdf					
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	BJ	J. Stott. "The Effects of Phase Noise in COFDM." <i>EBU Technical Review</i> , pp. 1-22, Summer 1998.					
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	CA						
FOREIGN PATENT DOCUMENTS							
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	CB						
OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)							
	CC	Jan-Jaap van de Beek, Ove Edfors, Per Ola Borjesson, Mattias Wahlqvist and Christer Ostberg. "Channel Estimation in the Uplink of an OFDM System." <i>NRS Symposium</i> , pp. 32-35, Lund, Sweden, August 1996.					
	CD	SeongHo Ha, Inho Hwang and HwangSoo Lee. "A Decision-Directed Frame Synchronization Algorithm for OFDM Systems." <i>IEICE Trans. Communication</i> , vol. E83-B, no. 7, pp.1563-1566, Jul. 2000.					
	CE	Thomas Keller, Lorenzo Piazza, Paolo Mandarini and Lajos Hanzo. "Orthogonal Frequency Division Multiplex Synchronization Techniques for Frequency-Selective Fading Channels." <i>IEEE Journal on Selected Areas in Communications</i> , vol. 19, no. 6, pp. 999-1008, Jun. 2001.					
	CF	I. Barhumi and M. Moonen. "Pilot Tone-based Channel Estimation for OFDM Systems with Transmitter Diversity in Mobile Wireless Channels." from <i>Proceedings of the program for research on integrated systems and circuits (ProRISC)</i> , Veldhoven, The Netherlands, pp. 270-275, Nov. 2001.					
	CG	Nils Sundstrom, Ove Edfors, Per Odling, Hakan Eriksson, Timo Koski and Per Ola Borjesson. "Combined Linear-Viterbi Equalizers-A Comparative Study and A Minimax Design." <i>IEEE Vehicular Technology Conference</i> , pp. 1263-1267, Stockholm, Sweden, Jun. 1994.					
	CH	J H Stott. "Explaining Some of the Magic of the COFDM." From <i>Proceedings of 20th International Television Symposium 1997</i> , Montreux, Switzerland, Jun. 13-17, 1997. Available online at http://www.bbc.co.uk/rd/pubs/papers/paper_15/paper_15.html .					
	CI	Ufuk Tureli, Hui Liu and Michael Zoltowski. "OFDM Blind Carrier Offset Estimation: ESPRIT." <i>IEEE TRANSACTIONS ON COMMUNICATIONS</i> , vol. 48, no. 9, September 2000.					
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OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)							
	DC	Jan-Jaap van de Beek, Ove Edfors, Magnus Sandell, Sarah Kate Wilson and Per Ola Borjesson. "On Channel Estimation in OFDM Systems." Division of Signal Processing Lule University of Technology, Sweden & Purdue University School of Electrical Engineering USA, Proceedings at IEEE VTC 95, Chicago, 1995. Available online at http://www.sm.luth.se/csee/sp/research/conference/On_Channel_Est_in_OFDM_Syst.pdf .					
	DD	M. Julia Fernandez-Getino Garcia, Ove Edfors and Jose M. Paez-Borrallo. "Joint 2D-Pilot-Symbol-Assisted-Modulation and Decision-Directed Frequency Synchronization Schemes For Coherent OFDM." Proc. ICASSP'2000, vol 5, pp. 2961-2964. Istanbul, Turkey, June 2000.					
	DE	Ye (Geoffrey) Li. "Simplified Channel Estimation for OFDM Systems With Multiple Transmit Antennas." IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, vol. 1, no. 1, pp.67-75, January 2002.					
	DF	Michele Morelli and Umberto Mengali. "A Comparison of Pilot-Aided Channel Estimation Methods for OFDM Systems." IEEE TRANSACTIONS ON SIGNAL PROCESSING, vol. 49, no. 12, pp.3065-3073, December 2001.					
	DG	B. Muquet, M. de Courville, G.B. Giannakis, Z. Wang and P. Duhamel. "Reduced Complexity Equalizers For Zero-Padded OFDM Transmissions." Intl. Conf. on Acoustics, Speech and Signal Processing, June 2000, Istanbul, Turkey. Available online at http://clue.eng.iastate.edu/~zhengdao/publications/papers/mcgw00.pdf .					
	DH	Ove Edfors, Magnus Sandell, Jan-Jaap van de Beek, Daniel Landstrom and Frank Sjoberg. "An Introduction to Orthogonal Frequency-Division Multiplexing." Research Report TULEA 1996:16, Div. of Signal Processing, Luleå University of Technology, Luleå, Sept. 1996.					
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	EC	Takeshi Onizawa, Masato Mizoguchi and Masahiro Morikura. "A Novel Channel Estimation Scheme Employing Adaptive Selection of Frequency-Domain Filters for OFDM Systems." <i>IEICE Trans. Comm.</i> , vol. E82-B, no. 12, pp.1923-1930, December 1999.					
	ED	Magnus Sandell and Ove Edfors. "A Comparative Study of Pilot-Based Channel Estimators for Wireless OFDM." Div. Signal Processing, Luleå Univ. Technol., Luleå, Sweden, Res. Rep. TULEA 1996: 19, Sept. 1996.					
	EE	Erik Lindskog and Claes Tidestav. "Reduced Rank Channel Estimation." <i>IEEE Vehicular Technology Conference</i> , Houston, TX, May 16-20, 1999, pp 1126-1130.					
	EF	Heiko Schmidt, Volker Kuhn and Karl-Dirk Kammeyer. "Channel Tracking in Wireless OFDM Systems." The 5 th World Multi-Conference on Systemics, Cybernetics and Informatics, SCI 2001, July 22-25, 2001, Orlando, Florida USA. Available online at http://www.ant.uni-bremen.de/whomes/schmidt/papers/sci2001.pdf .					
	EG	Ove Edfors, Magnus Sandell, Jan-Jaap van de Beek, Sarah Kate Wilson and Per Ola Borjesson. "OFDM Channel Estimation by Singular Value Decomposition." <i>IEEE Trans. Commun.</i> , vol. 46, pp. 931-939, July 1998.					
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	EI						
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